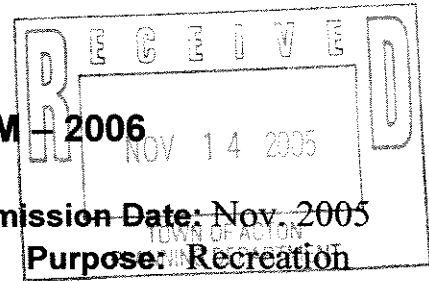


## PROJECT APPLICATION FORM – 2006



**Applicant:** Board of Selectmen

**Submission Date:** Nov. 2005

**Applicant's Address, Phone Number and Email**

472 Main Street, Acton, MA

978-263-9631

ttidman@acton-ma.gov

**Purpose:** Recreation

**Town Committee (If applicable):**

**Project Name:** Creation of Universal Access Entryway & Trail at Acton Arboretum

**Project Location/Address:** Acton Arboretum

**Amount Requested:** \$ 253,560.00

### Project Summary

The Acton Arboretum is the most widely used conservation area in the Town of Acton. As the Arboretum has developed, *Universal Access* has been a consideration throughout the design process for any new collections in accordance with the Master Plan for the property. Over the past few years, the Town of Acton in cooperation with the Friends of the Acton Arboretum, Inc. has invested in capital improvements at the Arboretum, upgrading some commonly-used trails, installing boardwalks, adding features to improve safety for all visitors, and repositioning trails to meet accessibility requirements under the Americans with Disabilities Act (ADA). Even with this concerted effort, the Arboretum still falls short of providing true Universal Access.

If approved, this proposal would create a new *multifunction universal access entry* to the Arboretum from the Taylor Road parking lot accommodating walkers, wheelchair users, and maintenance equipment. It would also create a new *universal access trail* in the main portion of the Arboretum (the upper grounds), leading from the entryway to a newly created sensory garden currently being developed and to the existing trail by the butterfly garden.

This proposal creates recreational opportunities for an *under-served population* – persons with disabilities, especially the visually impaired and those in wheelchairs. The project seeks to expand the use of the Arboretum to a wider population, the visually impaired by creating trails with well-defined edges contrasting in color and texture, a goal long held by the Acton Commission on Disability. In addition, the project *meets the needs of multiple populations*, such as elderly citizens and disabled persons who need a stable surface for walking safely and those with small children in strollers.

**Estimated Date for Commencement of Project:**

July 2006

**Estimated Date for Completion of Project:**

December 2006

## Project Narrative

This proposal will create a new *universal access multifunction entryway* to the Acton Arboretum from the Taylor Road parking lot accommodating walkers, wheelchair users, and maintenance equipment. It will also create a new *universal access trail* in the main portion of the Arboretum, leading from the new entryway to a newly created sensory garden and to the existing trail by the butterfly garden.

As described in the Project Summary, the project meets the needs of an underserved population – the visually impaired and other disabled people – and it meets the needs of multiple other populations – disabled or elderly people who need sure footing to enjoy a walk in nature and those pushing strollers who want to explore the outdoors with small children.

The Acton Arboretum is a specialized parcel of Acton Conservation Land, managed by the Natural Resources Department under the auspices of the Conservation Commission. The property is supported by the Acton Land Stewards. In addition, the Friends of the Acton Arboretum, Inc., a nonprofit organization, maintains many of the gardens, donates countless volunteer hours, and donates goods and services to the Town to benefit the property.

In fact, this proposal leverages funds being expended on other projects already underway by the Friends of the Acton Arboretum to enhance the overall experience at the Arboretum for persons with disabilities. It also leverages funds recently expended by the Town and the Friends of the Arboretum on the trail system for the same reason.

When the full plan is combined with the Lilac and Fragrance Gardens (currently under construction in the Arboretum by the Friends of the Arboretum using donated funds and with support from Town Staff), this project will make the Arboretum unique in the area as a destination for persons with disabilities. Accessibility to these new gardens will give the visually impaired and those in wheelchairs an opportunity to readily experience these new collections through the senses of touch and smell. The newly designed trails will also appeal to those who enjoy the outdoors but are limited by uneven terrain found in many other walking destinations.

The project must be designed to meet accessibility requirements under the Americans with Disabilities Act (ADA) as described by the Massachusetts Architectural Access Board Regulations 521 CMR. Sections of the regulations that pertain to this project will be included with the final quote package.

Funds have already been secured by the Friends for a second ongoing project through a \$6,400 grant from the William P. Wharton Trust of Boston to create an annotated self-guided tour of the upper grounds for persons with disabilities. A general self-guided tour has already been completed as part of this project. The features described in this proposal will be thoroughly documented for visitors to the Arboretum through the distribution of the second guide as part of the Friends' effort to provide information on trails, gardens, and collections in multiple formats.

The project includes two components:

- The universal access **trail**
- The universal access multifunction **entryway**

The **trail** component consists of creating approximately 1345 feet of *universal access trail* heading east from the gate by the kiosk at the Taylor Road parking lot, to the right down the hill behind existing trees towards the nature pond, and left around the outer edge of the lawn towards the Butterfly Garden. The work includes a low retaining wall along a section that must be recessed to meet the MA Architectural Access Board's grade requirements. Where a farm path leads east, the trail heads towards the farm ponds and loops back into the area of the lilac garden making a wide loop around a black walnut tree near the site of the future fragrance garden. In addition, breaks will occur at regular intervals along the trail where benches will be sited according to the MA Architectural Access Board's requirements.

The **trail** will be bordered by 4"x5"x9" grey granite cobbles (matching those already installed in a limited area), set end-to-end and flush with the edge of the ground, in concrete reinforced with rebar to prevent shifting when the ground is frozen or when driven over by heavy maintenance vehicles. The site will be prepped by excavating 6" to 8" of material 5'8" inches wide along the length of the trail. Polyester landscape fabric will underlay the compacted stone dust filling the excavated trail to prevent the mixing of sub-soils and to keep the surface integrity maintenance-free for years. Landscape fabric will reduce the intrusion of weeds and grass into the trail, reducing the need for mechanical or herbicidal weed control. The trail must be smooth and level from side-to-side with the cobbles set even with the compacted stone dust in order to meet MA Architectural Access Board's requirements.

In some areas, to meet the MA Architectural Access Board's grade requirements, the trail must be dug into the hillside to achieve the proper grade and cross slope. In places where the trail cuts into the hillside, stone walls and garden beds will be built to retain the edge. In areas potentially subject to erosion from heavy rains, swales should

be constructed adjacent to the uphill section of the trail to divert water and keep it from eroding the trail. In sections liable to fill with water during heavy rains or spring melt, care should be taken to raise the surface of the trail to keep it drier. In those areas, drainage swales can be installed on each side of the trail. If drainage crossings (water bars) are needed anywhere on the trail, they should be constructed of flexible material.

Some sections of the trail may not be able to be built to meet the maximum grade specified by the MA Architectural Access Board. These trail sections must be designed to fall within parameters defined by US Access Board's Guidelines for Outdoor Recreation Areas and the surface of the sections requiring variances must be covered with stabilized stone dust in order to minimize erosion and to ease travel on a less-than-flat grade. See Appendix A.

Places where benches will be installed will also be excavated and constructed in the same manner as the trail and edged with rubber or plastic edging. A short five foot wide trail will lead to each bench and a space three feet by six feet will also be prepared with a stone dust surface beside each bench to meet State's Architectural Access Board's requirements. Concrete footings with leg anchors for four-foot wide benches will be installed in each bench site by the Town of Acton at a later date. The cost of the benches will be underwritten by the Friends of the Acton Arboretum. Nine bench sites need to be prepared along the trail in locations described by Acton's Natural Resource Director. (One bench is already in place.)

Any areas that are dug up or disturbed by construction vehicles as part of the project, must be filled with loam and reseeded with grass where necessary to eliminate ruts created by the vehicles. If areas to be reseeded are ready close to winter, then the reseeded must occur the following spring.

Information for contractors bidding on the job will include copies of the relevant state regulations from the MA Architectural Access Board.

The **entryway** component will create a *universal access multifunction entry* to the Arboretum and will include a universal access walkway, a new culvert and driving surface that can support the weight of maintenance trucks and other heavy machinery, and new arched fieldstone walls with a gate to prevent unauthorized vehicle entry to the lawn while still providing a safe entrance for visitors. The surface of the universal access walkway will match the surface of the universal access trail while two 24 to 26 feet long tracks, each about 27-30 inches wide and paved with granite cobblestones, will be set into the ground crossing the culvert so that vehicles can pass though the entryway without forming ruts. The entryway's surface surrounding the granite cobbles

will be spread with loam and planted with grass. To prepare for future improvements, multiple 4" PVC conduits will be buried perpendicular to the culverts to anticipate the need for water lines, power, and communication lines into the site from the street and parking lot.

Drawings describing the design of the entryway will be included with this document and in the package available for contractors bidding on the job. The gate will be purchased and installed after the entryway is complete so the project proposal contains an allowance to cover the purchase and installation of the gate.

### **Site Control**

The Acton Arboretum is Town conservation land. As such, this project will be undertaken by the Town under direction of the Natural Resources Department.

### **Feasibility**

The work described by this project is neither complicated nor difficult to complete, although seasonal factors will dictate when the work can proceed. Because the project builds on work begun by the Town and the Friends of the Acton Arboretum, there is a knowledge base on what is needed to complete the project and how best to complete it successfully. The Friends of the Arboretum have a proven track record supporting this site and are committed to donating their time, services, and funding to the Town of Acton to support this project and to help see it through to completion.

A wetlands permit will be required to build the trail through the area of the Lilac and Fragrance Gardens. Since the Conservation Commission already granted an initial wetlands permit in 2004 to the Town to clear the area for the gardens and to allow a survey of the area, meeting this requirement should not be difficult.

Because some sections of the trail may not meet the grade requirements of the MA Architectural Access Board, the Town will need to request a variance with that Board. According to the Director of the MA Architectural Access Board, because the only applicable regulations describe requirements for *walkways* (and our trail is not a *walkway* in the architectural sense), variances requested for trails are likely to be granted when the requested variance falls within publicly-available guidelines. See Appendix A for some published guidelines.

## **Project Scope**

Completing this project requires purchasing landscaping services. Materials can be purchased directly by the Town from local sources or bundled with the project and provided by the contractor. For this project, however, we will ask the contractor to provide the materials. Whenever possible, bulk materials, especially cobbles, blocks or stone, should be delivered close to the work site. For example, pallets of cobbles should be spaced along the site of the new trail. Other materials must be stored in areas designated by Town staff.

To ensure enough materials are purchased for the project, we used a distance of 1400 feet for planning purposes, allowing a small overage beyond the measured 1345 feet to compensate for trail intersections and other variations from the original distance measurements.

As you can see from the included professional estimate completed by a local landscape contractor, the cost of the project will be in excess of \$25,000, the amount that triggers the Request for Proposal process.

### ***Materials needed for the trail and bench locations***

- 4"x4.5"x9" grey cobbles -- palletized
- Stone dust
- Gravel to fill in low areas (possibly)
- Concrete
- 3/8" Rebar
- Landscape fabric (5' wide)
- Loam and grass seed
- Steel edging for bench locations

### ***Materials needed for the entryway***

- Fieldstone
- Concrete footings and foundation
- Crushed rock for beneath footings
- Granite cobblestones
- Stone dust
- Loam and grass seed
- Landscape fabric
- Culvert

- 4" PVC conduit
- Gate with side supports and hardware – The gate must open in the center, be suspended from granite posts, and have an arched top. Visitors have to be able to see through the gate into the Arboretum. A widely-spaced picket style might work best.

## Appendix A: Excerpts from

### *Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas*

#### *Final Report*

**September 30, 1999**

This document was obtained from the US Access Board Technical Assistance Hotline. It is the set of guidelines which will be used to craft regulations for accessible outdoor areas including trails. The initial part of this document is included with the grant application because it describes the accessibility requirements for trails and as such it provides the technical basis for requesting a variance from the MA Architectural Access Board for the Arboretum's trail for the areas where the running slope will not be able to conform to the MA Regulation 531 CMR for walkways (the current MA regulations governing accessibility).

Other sections of this document (not included at this time) describe the information about trail conditions that should be posted on signs at trailheads or documented in trail guides available at trailheads. This information will be used to create signs for the Arboretum's kiosk and the self-guided tour documentation for the Universal Access Trail at the Arboretum.

The complete set of Guidelines can be found at: <http://www.access-board.gov/outdoor/outdoor-rec-rpt.htm>.

## **16. OUTDOOR DEVELOPED AREAS**

Outdoor developed areas covered by this section shall comply with the applicable requirements of section 4 and the special application sections, except as modified or otherwise provided in this section.

**16.1 General.** All newly designed and constructed pedestrian trails or altered portions of existing pedestrian trails connecting to designated trailhead or accessible trails shall comply with 16. All newly designed and constructed camping facilities, picnic areas, and beach access routes or altered portions thereof shall comply with 16.

**16.1.1 Extent of Application.** Departures from specific technical provisions of this section shall be permitted where specified, and where at least one of the following conditions is present. The conditions in this section do not obviate or limit in any way obligations to comply with 16 at any point that the conditions are not present.

1. Where compliance would cause substantial harm to cultural, historic, religious, or significant natural features or characteristics; or,
2. Where compliance would substantially alter the nature of the setting or the purpose of the facility, or portion of the facility; or,
3. Where compliance would require construction methods or materials that are prohibited by federal, state, or local regulations or statutes; or,
4. Where compliance would not be feasible due to terrain or the prevailing construction practices.

### **Definitions.**

Trail.

A route that is designed, constructed, or designated for recreational pedestrian use or provided as an pedestrian alternative to vehicular routes within a transportation system.

### **Designated Trailhead.**

A designated point of access that may contain a parking area, information kiosks, restrooms, water hydrants, and may be reached by vehicular or pedestrian access.



### **Tread width.**

The path or visible trail surface perpendicular to the direction of travel. The clear tread width of the trail is the width of the useable trail tread, measured perpendicular to the direction of travel and on or parallel to the surface of the useable trail tread. The minimum clear tread width is the narrowest measurement on the useable trail tread.

**16.2 Trails.** Where trails are provided, the trail shall comply with 16.2. Where provided, elements located on accessible trails shall comply with 16.5 through 16.21. Elements are not required to be connected by an outdoor recreation access route.

**EXCEPTIONS: 1.** Where one or more of the conditions in 16.1.1 exists, and where one or more of the conditions in this exception exists, the provisions of 16.2 shall not apply after the first point of departure. The segment of the trail between the trailhead and the first point of departure shall comply with 16.2 unless the trail segment is 500 feet (150 m) or less in length. Where there is a prominent feature less than 500 feet (150 m) from the trailhead, the trail segment between the trailhead and the prominent feature shall comply with 16.2.

The conditions of this exception are:

- a. The combination of running slope and cross slope exceeds 40 percent for over 20 feet (6100 mm); or
- b. A trail obstacle 30 inches (760 mm) or more in height across the full tread width of the trail; or
- c. The surface is neither firm nor stable for a distance of 45 feet or more; or
- d. A clear width less than 12 inches (305 mm) for a distance of 20 feet (6100 mm) or more
- e.

**2.** Where one or more of the conditions in 16.1.1 are met resulting in departures from the technical provisions in 16.2 for over 15 percent of the length of the trail, 16.2 shall not apply after the first point of departure. The segment of the trail between the trailhead and the first point of departure is required to comply with 16.2 unless the trail segment is 500 feet (150 m) or less in length. Where there is a prominent feature less than 500 feet (150 m) from the trailhead, the trail segment between the trailhead and the prominent feature shall comply with 16.2.

**16.2.1 Surface.** The trail surface shall be firm and stable.

**EXCEPTION.** The provision shall not apply where a firm and stable surface can not be provided because at least one of the four conditions specified in 16.1.1 applies.

**16.2.2 Clear Tread Width.** The clear tread width of the trail shall be 36 inches (915 mm) minimum.

**EXCEPTIONS 1.** The clear tread width shall be permitted to be reduced to no less than 32 inches (815 mm) minimum where at least one of the four conditions specified in 16.1.1 apply. **2.** The provision shall not apply where 32 inches (815 mm) minimum clear tread width can not be provided because at least one of the four conditions specified in 16.1.1 applies.

**16.2.3 Openings.** Openings in trail surfaces shall be of a size that does not permit passage of a ½ inch (13 mm) diameter sphere. Elongated openings shall be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel.

**EXCEPTIONS 1.** Elongated openings are permitted to be parallel to the dominant direction of travel where the opening does not permit passage of a 1/4 inch (6.5 mm) diameter sphere. **2.** Openings shall be permitted to be of a size that do not permit passage of a 3/4 inch (19 mm) diameter sphere where at least one of the conditions in 16.1.1 apply. **3.** Where openings that do not permit passage of a 3/4 inch (19 mm) diameter sphere are not feasible, because at least one of the conditions in 16.1.1. applies, the provisions of 16.2.3. shall not apply.

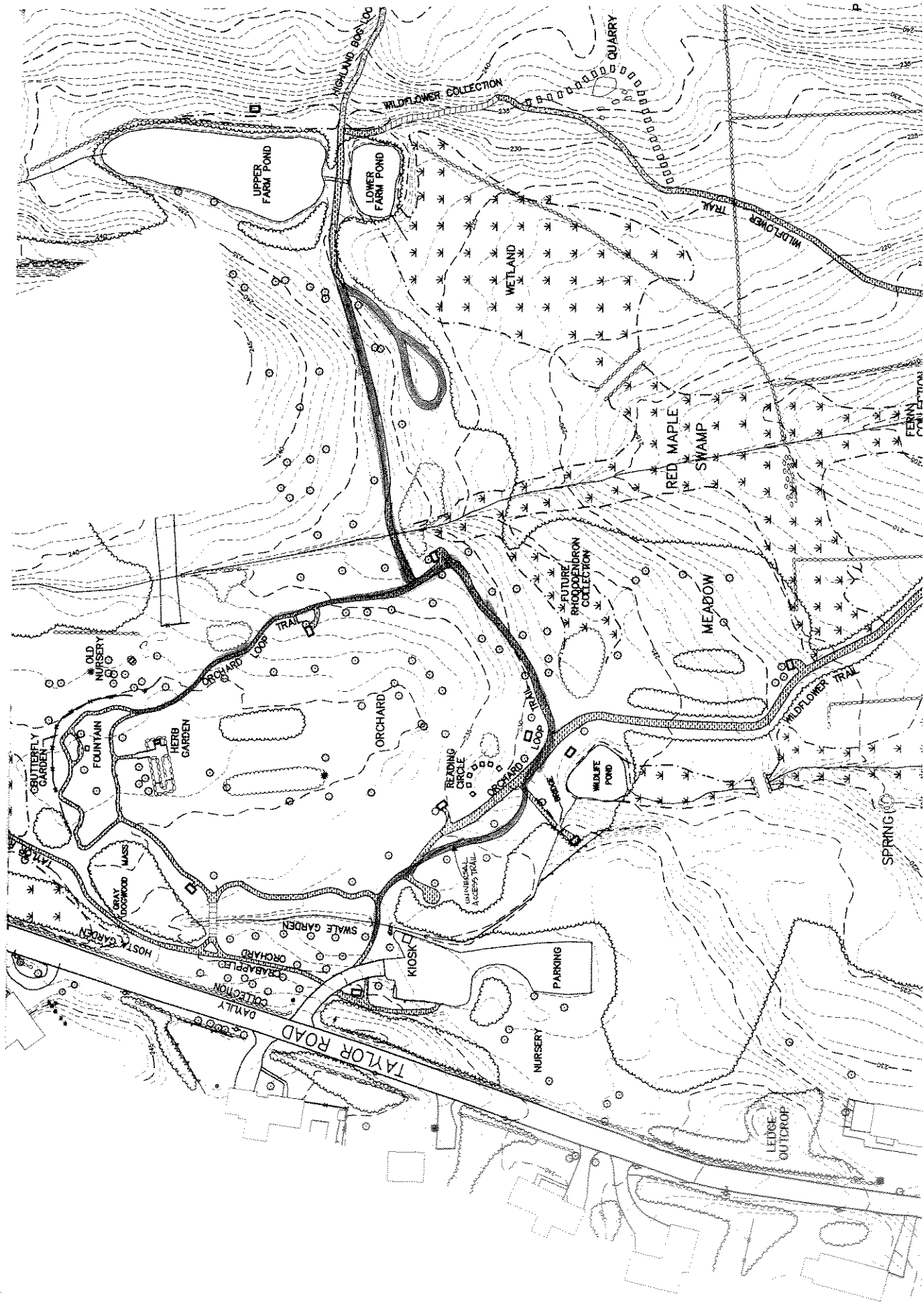
**16.2.4 Protruding Objects.** Protruding objects on trails shall comply with ADAAG 4.4.1. and shall have 80 inches (2030 mm) minimum clear head room.

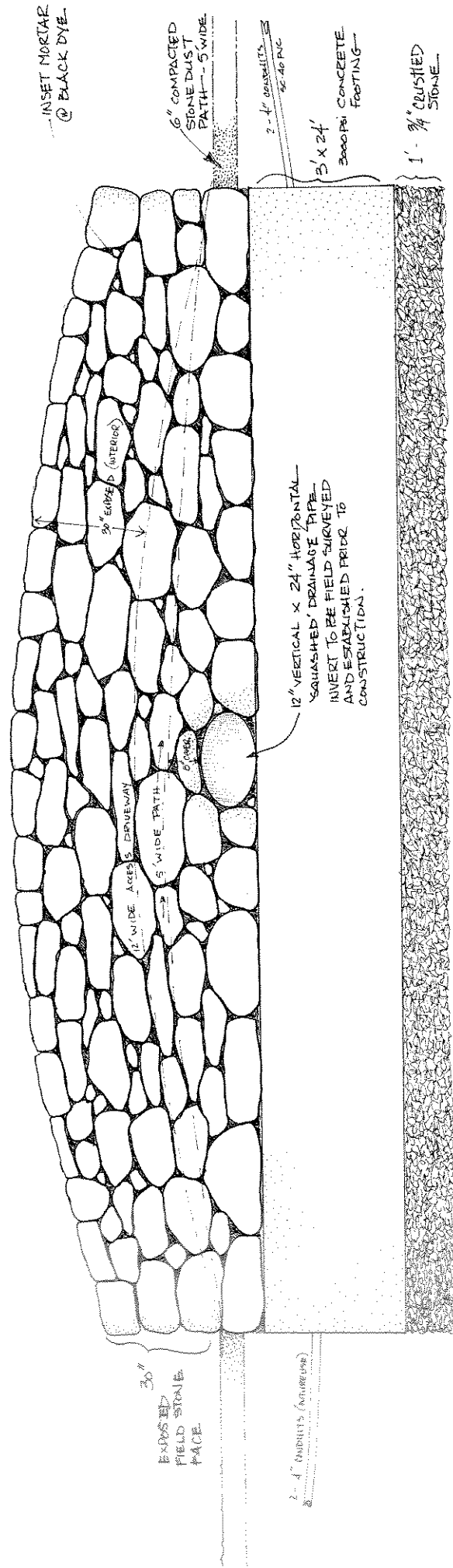
**EXCEPTION.** Where vertical clearance of a trail is reduced to less than 80 inches (2030 mm) where one of the four conditions specified in 16.1.1 applies, a barrier to warn blind and visually impaired persons shall be provided.



## Materials Included with Acton Arboretum Application

1. A map showing the location of the new trail in the Arboretum
2. Drawings of the proposed entryway showing the side-view plan for the footings and wall
3. Drawings of the proposed entryway showing the front-view plan for the driveway and adjacent walkway
4. A plan prepared by the Engineering Department of the Town of Acton for the location of the trail near the Lilac and Fragrance Gardens
5. Professional cost estimate for the project prepared by Dan Lenox of Lenox Nursery, Acton, MA
6. Photos showing:
  - a. Condition of current entryway
  - b. Site of new trail
  - c. Challenging areas for new trail
  - d. Example surface of a universal access trail
7. Letters of support
  - a. Acton Commission on Disability
  - b. Friends of the Acton Arboretum, Inc.

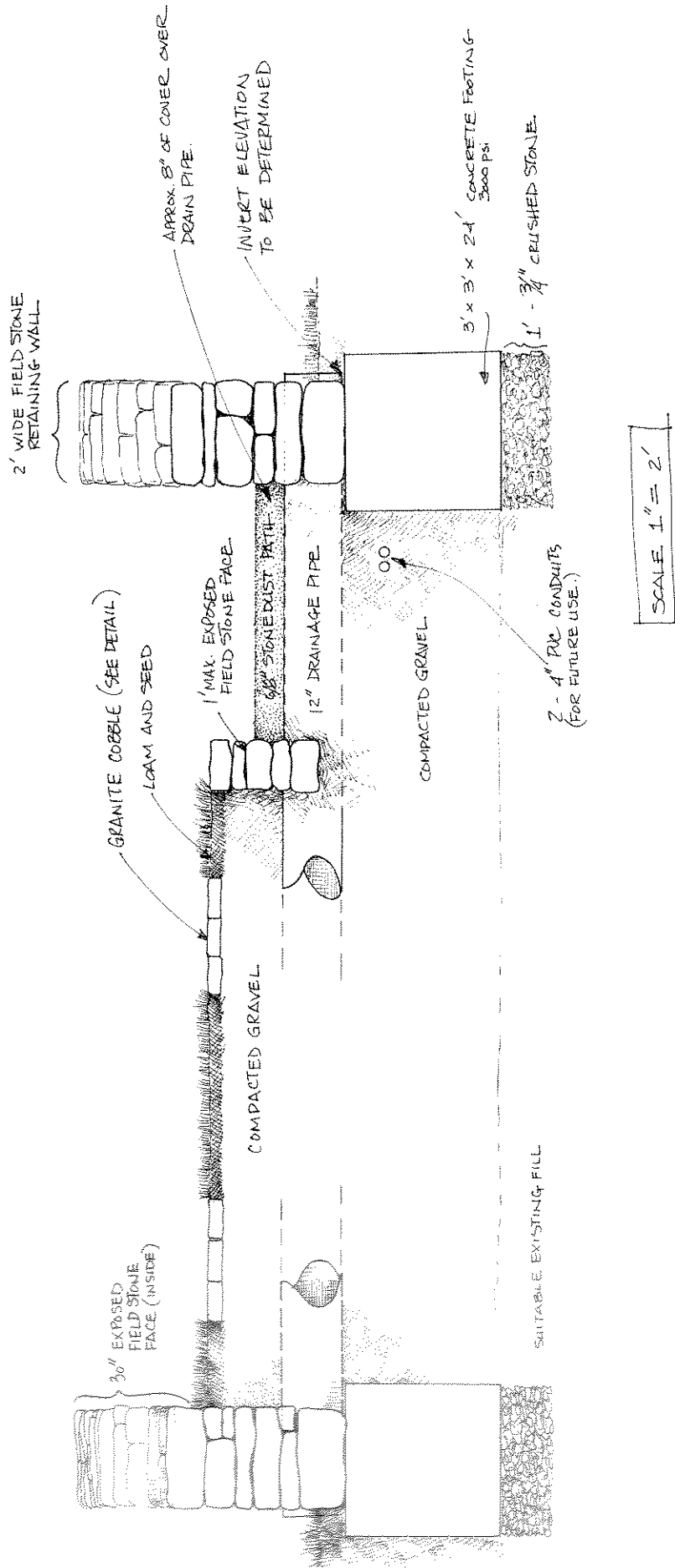


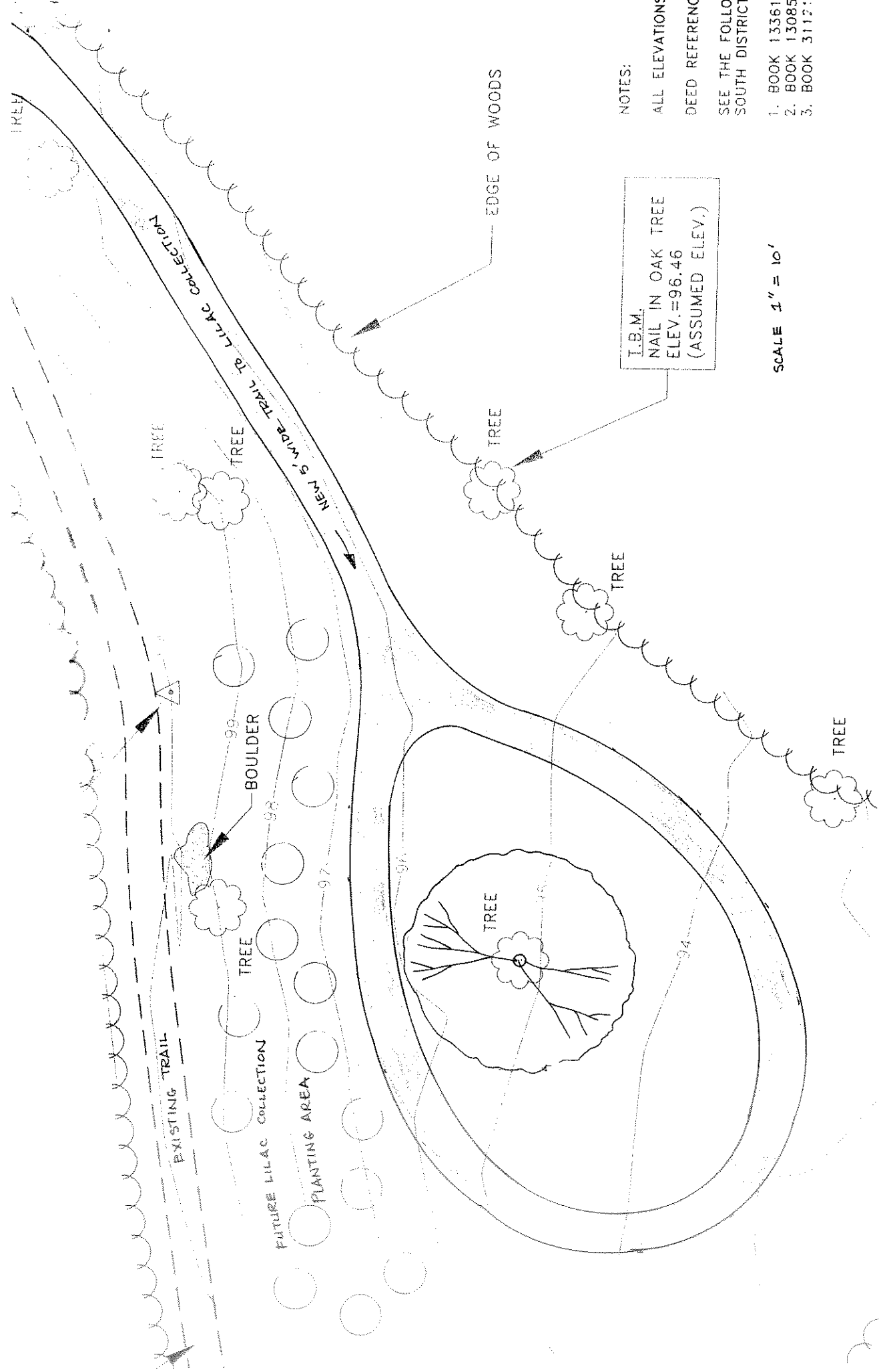


CROSS-SECTION DRAWING

SCALE 1" = 2'

CULVERT CROSSING



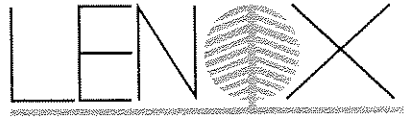


NOTES:

- ALL ELEVATIONS
- DEED REFERENCE
- SEE THE FOLLO SOUTH DISTRICT
- 1. BOOK 13361
- 2. BOOK 13085
- 3. BOOK 3112:

I.B.M.  
NAIL IN OAK TREE  
ELEV.=96.46  
(ASSUMED ELEV.)

SCALE 1" = 10'



D.P. Lenox Landscaping, Inc.

11/09/05

**Estimate for Acton Arboretum Trail Project**

**New Entrance to Arboretum:** Approx.


Cobble stone rubble strips, culvert, gate and stone walls.

\$128,080.00

**New Trails:** Approx.

Cobble stone edging, Excavation and installation of Gravel and stone dust, for trails and bench areas.

\$125,480.00

  
Daniel P. Lenox, President



## Photos of Current Entryway



(1)



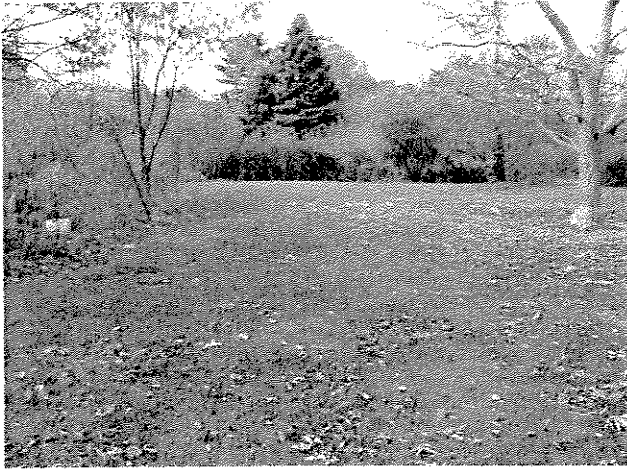
(2)



(3)

(1), (2), (3) Current entryway showing its rutted surface, a surface difficult for disabled persons to navigate

## Photos of New Trail Site



(1)



(2)

Site of new trail – behind tree and along the left (1) or far left edge (2) of the lawn



(3) New trail leads away from this tree



(4) New trail makes a loop below the Lilac Garden

## Challenge Areas for New Trail



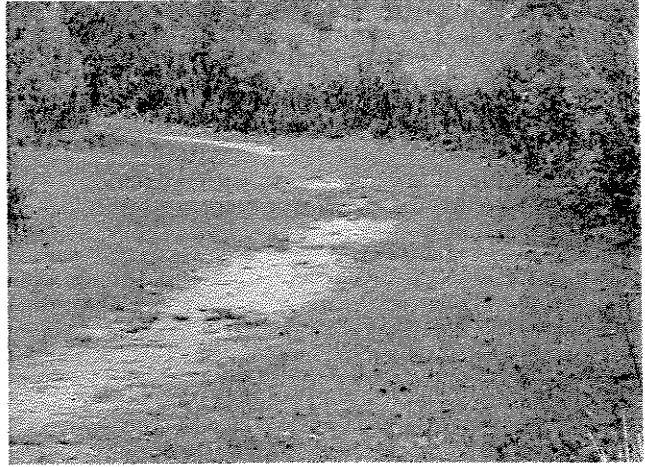
(1) This section must be raised to eliminate ruts.



(2)



(3)



(4)

(2), (3), (4) All trail sections, including these, need to be level from side-to-side (a 1:50 grade), and if a variance is required because a 1:20 slope cannot be met, the surface will be stabilized stone dust. A Universal Trail is smooth with no protruding objects greater than 1/4".

## Example of Universal Access Trail Surface



(1)



(2)

(1), (2) Trail surface by the Butterfly Garden

Friends of the Acton  
Arboretum  
P.O. Box 2607  
Acton, Massachusetts  
01720



Community Preservation Committee  
Town of Acton  
472 Main St.  
Acton, MA 01720

November 9, 2005

Dear CPC Members,

The Friends of the Acton Arboretum is pleased to support the Town of Acton's request for Community Preservation Act funds for the establishment of a Universal Trail at the Acton Arboretum. The Friends of the Acton Arboretum has a history of successful cooperative projects with the Town of Acton. This kind of opportunity now presents itself with the development of an accessible trail from the entryway to the new Lilac Collection and Fragrance Garden. The creation of a new trail will provide tremendous recreational opportunities to disabled residents in our town. We have contacted the Commission on Disability and been assured of its continued support of a Universal Trail at the Acton Arboretum.

The Friends of the Acton Arboretum is prepared to assist this effort with its extensive experience supporting hardscape and landscape development at this town conservation property. As an additional show of support, the Friends of the Acton Arboretum is prepared to donate benches to the Town to provide the required number of resting areas throughout the trail, as per ADA guidelines.

The Town of Acton and the Friends of the Acton Arboretum have an established and well proven partnership. We look forward to your response.

Sincerely,

Catherine Fochtman  
President

---

Board of Directors | Cathy Fochtman, President | Joan Yatteau, Vice-President |  
Brewster Conant, Treasurer | Bettina Abe, Clerk | Board Members | Belle Choate |  
Julie Coop | Catherine Hatfield | Mary Donald, M.D. | Sid Levin | Ken Meyer |



## **ACTON COMMISSION ON DISABILITY**

Town Hall  
Acton, MA 01720

November 7, 2005

Matt Lundberg, Chairperson  
Community Preservation Commission  
Town of Acton  
Watertown, MA 02172

Dear Chairman Lundberg,

I am pleased to offer the support of the Acton Commission on Disability to the application of the Friends of the Acton Arboretum for a Community Preservation Grant. The Friends are proposing a project, which will improve Arboretum pathways so that the terrain is more manageable for individuals with disabilities. Their project also includes the addition of benches, adaptations to railings and a signage system, all of which will make the experience of visiting the Arboretum one which all of Acton's residents and visitors will be able to enjoy.

Through their initiatives in maintaining and enhancing the Arboretum, The Friends have demonstrated an ongoing commitment to the same ideals articulated by the Community Preservation Commission. Their proposed project will preserve and enhance the natural and man-made features of the Arboretum, will be implemented in a manner that protects the Arboretum environment, and will create more opportunities for all of Acton's residents to take advantage of the recreational experience the Arboretum offers. Acton has a history of ensuring that high quality recreational opportunities are available to all. The work of the Friends, which has consistently been sensitive to the particular needs of individuals with disabilities, contributes to this aim. The Commission on Disability and the Friends have an ongoing relationship of collaboration and a shared interest in improving accessibility of the Arboretum. The proposed project will ensure that visitors will enjoy not only ease of accessibility, but also a high quality experience during their visit.

Again, The Commission on Disability looks forward to collaborating with the Friends should their grant be funded. We are committed to offering them whatever assistance and support is needed in ensuring that the Arboretum becomes a space that offers enjoyment and recreation for all.

Sincerely,



Jean M. Nigro  
Secretary